

IEI Technology Corp.



Monitor Calibration Kit

User Manual



Rev. 1.01 June, 2008



Revision

| Date | Version | Changes |
|-------------|---------|---|
| June, 2008 | 1.01 | Changed software interface titles to "MMD |
| | | Monochrome Series" |
| March, 2008 | 1.00 | Initial release |



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Manual Conventions



Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously. Warnings are easy to recognize. The word "warning" is written as "**WARNING**," both capitalized and bold and is followed by text. The text is the warning message. A warning message is shown below:



WARNING:

This is an example of a warning message. Failure to adhere to warning messages may result in permanent damage to the GeniSPOT or personal injury to the user. Please take warning messages seriously.

Cautionary messages should also be heeded to help reduce the chance of losing data or damaging the GeniSPOT. Cautions are easy to recognize. The word "caution" is written as "**CAUTION**," both capitalized and bold and is followed. The text is the cautionary message. A caution message is shown below:



This is an example of a caution message. Failure to adhere to cautions messages may result in permanent damage to the GeniSPOT. Please take caution messages seriously.

Page iv



These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes. Notes are easy to recognize. The word "note" is written as "**NOTE**," both capitalized and bold and is followed by text. The text is the cautionary message. A note message is shown below:

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This is an example of a note message. Notes should always be read. Notes contain critical information about the GeniSPOT. Please take note messages seriously.









If any of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the IEI reseller or vendor you purchased the GeniSPOT from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to sales@iei.com.tw.

The items listed below should all be included in the GeniSPOT package.

- 1 x GeniSPOT calibration tool
- 1 x Utility CD

Images of the above items are shown in Chapter 2.



Table of Contents

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Page vii

| 1 INTRODUCTION | 1 |
|---|--|
| 1.1 Introduction | 2 |
| 1.2 System Requirements | 2 |
| 1.2.1 Hardware Requirements | 2 |
| 1.2.2 Software Requirements | 3 |
| 2 UNPACKING | 4 |
| 2.1 UNPACKING PRECAUTIONS | 5 |
| 2.2 PACKAGE CONTENTS | 5 |
| 3 INSTALLATION | 6 |
| 3.1 INSTALLATION OVERVIEW | 7 |
| 3.2 HARDWARE INSTALLATION | 7 |
| 3.3 DRIVER INSTALLATION | 9 |
| 3.4 GENIPASS INSTALLATION | 3 |
| 4 SOFTWARE CONFIGURATION | 8 |
| | |
| 4.1 OVERVIEW | 9 |
| 4.1 OVERVIEW | 9 9 |
| 4.1 OVERVIEW 19 4.2 Starting GeniPASS 19 4.3 User Settings 20 | 9 9 0 |
| 4.1 OVERVIEW 1 4.2 Starting GeniPASS 1 4.3 User Settings 2 4.4 Auto-Dimming Control 2 | 9 9 0 0 |
| 4.1 OVERVIEW 1 4.2 STARTING GENIPASS 1 4.3 USER SETTINGS 2 4.4 AUTO-DIMMING CONTROL 2 4.4.1 Auto-Dimming Control Setting Wizard 2 | 9 9 0 2 |
| 4.1 OVERVIEW 11 4.2 STARTING GENIPASS 11 4.3 USER SETTINGS 20 4.4 AUTO-DIMMING CONTROL 20 4.4 AUTO-DIMMING CONTROL 20 4.4.1 Auto-Dimming Control Setting Wizard 21 4.5 SELECT MONITOR 24 | 9 9 0 2 4 |
| 4.1 OVERVIEW 1 4.2 STARTING GENIPASS 1 4.3 USER SETTINGS 2 4.4 AUTO-DIMMING CONTROL 2 4.4 AUTO-DIMMING CONTROL 2 4.4.1 Auto-Dimming Control Setting Wizard 2 4.5 SELECT MONITOR 2 4.6 SELECT CONFORMANCE CRITERIA 2 | 9 9 0 2 4 5 |
| 4.1 OVERVIEW 1 4.2 STARTING GENIPASS 1 4.3 USER SETTINGS 2 4.4 AUTO-DIMMING CONTROL 2 4.4 AUTO-DIMMING CONTROL 2 4.4.1 Auto-Dimming Control Setting Wizard 2 4.5 SELECT MONITOR 2 4.6 SELECT CONFORMANCE CRITERIA 2 4.7 PROFILE 2 | 9 9 0 2 4 5 6 |
| 4.1 OVERVIEW114.2 STARTING GENIPASS114.3 USER SETTINGS204.4 AUTO-DIMMING CONTROL204.4 AUTO-DIMMING CONTROL204.4.1 Auto-Dimming Control Setting Wizard214.5 SELECT MONITOR244.6 SELECT CONFORMANCE CRITERIA214.7 PROFILE205 BASIC FUNCTIONS22 | 9 9 0 2 4 5 6 9 |
| 4.1 OVERVIEW 1 4.2 STARTING GENIPASS 1 4.3 USER SETTINGS 2 4.3 USER SETTINGS 2 4.4 AUTO-DIMMING CONTROL 2 4.4 AUTO-Dimming Control Setting Wizard 2 4.5 SELECT MONITOR 2 4.6 SELECT CONFORMANCE CRITERIA 2 4.7 PROFILE 2 5 BASIC FUNCTIONS 2 5.1 OVERVIEW 3 | 9 9 0 2 4 5 6 9 0 |
| 4.1 OVERVIEW 1' 4.2 STARTING GENIPASS 1' 4.3 USER SETTINGS 2' 4.4 AUTO-DIMMING CONTROL 2' 4.4 AUTO-Dimming Control Setting Wizard 2' 4.4.1 Auto-Dimming Control Setting Wizard 2' 4.5 SELECT MONITOR 2' 4.6 SELECT CONFORMANCE CRITERIA 2' 4.7 PROFILE 2' 5 BASIC FUNCTIONS 2' 5.1 OVERVIEW 3' 5.2 CONFORMANCE TEST 3' | 9 9 0 2 4 5 6 9 0 1 |
| 4.1 OVERVIEW 11 4.2 STARTING GENIPASS 11 4.3 USER SETTINGS 21 4.4 AUTO-DIMMING CONTROL 21 4.4 AUTO-Dimming Control Setting Wizard 21 4.4.1 Auto-Dimming Control Setting Wizard 22 4.5 SELECT MONITOR 24 4.6 SELECT CONFORMANCE CRITERIA 22 4.7 PROFILE 24 5 BASIC FUNCTIONS 22 5.1 OVERVIEW 36 5.2 CONFORMANCE TEST 3 5.3 UNIFORMITY TEST 32 | 9 9 0 2 4 5 6 9 0 1 2 |
| 4.1 OVERVIEW 14 4.2 STARTING GENIPASS 14 4.3 USER SETTINGS 24 4.4 AUTO-DIMMING CONTROL 24 4.4 AUTO-DIMMING CONTROL 24 4.4 AUTO-DIMMING CONTROL 24 4.5 SELECT MONITOR 24 4.5 SELECT MONITOR 24 4.6 SELECT CONFORMANCE CRITERIA 24 4.7 PROFILE 24 5 BASIC FUNCTIONS 25 5.1 OVERVIEW 36 5.2 CONFORMANCE TEST 35 5.3 UNIFORMITY TEST 35 5.4 LUMINANCE TEST 35 | 9 9 0 2 4 5 6 9 0 1 2 5 |



| 5.6 HISTORY LIST | 38 |
|--|----|
| 5.7 SWITCH TO GENIPASS PRO | 40 |
| 5.8 VIEW TEST REPORT | 41 |
| 5.9 About | 43 |
| 6 ADVANCED FUNCTIONS | 44 |
| 6.1 Overview | 45 |
| 6.2 Stop | 46 |
| 6.3 GENISPOT SELF-DIAGNOSIS | 46 |
| 6.4 PATTERN | 46 |
| 6.5 Import S/N & P/N | 48 |
| 6.6 SWITCH TO GENIPASS EXPRESS | 48 |
| 6.7 SELECT YOUR MONITOR | 48 |
| A COMPATIBILITY | 50 |
| A.1 COMPATIBLE OPERATING SYSTEMS | 51 |
| A.2 COMPATIBLE PROCESSORS | 51 |
| A.3 COMPATIBLE MEMORY MODULES | 52 |
| B HAZARDOUS MATERIALS DISCLOSURE | 53 |
| B.1 HAZARDOUS MATERIALS DISCLOSURE TABLE FOR IPB PRODUCTS CERTIFIED AS | |
| ROHS COMPLIANT UNDER 2002/95/EC WITHOUT MERCURY | 54 |



List of Figures

®Technology Corp.

| Figure 1-1: GeniSPOT | 2 |
|--|---|
| Figure 3-1: GeniSPOT Holder Attachment | 7 |
| Figure 3-2: USB Cable Setup (Single Monitor) | 8 |
| Figure 3-3: USB Cable Setup (Multiple Monitors) | 9 |
| Figure 3-4: Hardware Installation Wizard1 | 0 |
| Figure 3-5: Search for Drivers10 | 0 |
| Figure 3-6: Searching for Drivers1 | 1 |
| Figure 3-7: Select GeniSPOT Driver1 | 1 |
| Figure 3-8: GeniSPOT Drivers Installing12 | 2 |
| Figure 3-9: GeniSPOT Driver Installation Complete12 | 2 |
| Figure 3-10: GeniSPOT Main Menu1 | 3 |
| Figure 3-11: Language Selection14 | 4 |
| Figure 3-12: Hardware Wizard Welcome14 | 4 |
| Figure 3-13: Choose Installation Directory1 | 5 |
| Figure 3-14: Start Menu Folder1 | 5 |
| Figure 3-15: Desktop and Quick Launch Icon Selection10 | 6 |
| Figure 3-16: GeniPASS Installation Ready10 | 6 |
| Figure 3-17: GeniPASS Progress Indicator1 | 7 |
| Figure 3-18: GeniPASS Installation Complete1 | 7 |
| Figure 4-1: GeniPASS Group1 | 9 |
| Figure 4-2: GeniPASS Tray Icon19 | 9 |
| Figure 4-3: User Settings | 0 |
| Figure 4-4: Auto-Dimming Control2 | 1 |
| Figure 4-5: Auto-Dimming Prompt2 | 1 |
| Figure 4-6: Calibration Complete2 [·] | 1 |
| Figure 4-7: Auto-Dimming Wizard Step 12 | 2 |
| Figure 4-8: Auto-Dimming Wizard Step 22 | 3 |
| Figure 4-9: Auto-Dimming Wizard Step 32 | 3 |
| Figure 4-10: Select Monitor24 | 4 |
| Figure 4-11: Select Monitor2 | 5 |



®Technology Corp.

GeniSPOT Screen Calibration Kit

| Figure 4-12: Conformance Test | 26 |
|--|----|
| Figure 4-13: Select Conformance Criteria | 26 |
| Figure 4-14: Profile | 27 |
| Figure 4-15: Profile | 27 |
| Figure 5-1: GeniPASS Express | 30 |
| Figure 5-2: Conformance Test | 31 |
| Figure 5-3: Conformance Start | 31 |
| Figure 5-4: Conformance Test Progress | 31 |
| Figure 5-5: Conformance Complete | 32 |
| Figure 5-6: Uniformity Test | 32 |
| Figure 5-7: Uniformity Test Window | 33 |
| Figure 5-8: Center Block | 33 |
| Figure 5-9: Top-Left Block | 34 |
| Figure 5-10: Bottom-Left Block | 34 |
| Figure 5-11: Bottom-Right Block | 34 |
| Figure 5-12: Top-Right Block | 35 |
| Figure 5-13: Luminance Test | 35 |
| Figure 5-14: Luminance Test Window | 36 |
| Figure 5-15: Start Luminance Test | 36 |
| Figure 5-16: Luminance Test Complete | 36 |
| Figure 5-17: Run Calibration | 37 |
| Figure 5-18: Start Calibration | 37 |
| Figure 5-19: Calibration Test | 37 |
| Figure 5-20: Calibration Complete | 38 |
| Figure 5-21: History List | 38 |
| Figure 5-22: History List Window | 39 |
| Figure 5-23: HTML Results Page | 40 |
| Figure 5-24: Switch to GeniPASS Pro | 40 |
| Figure 5-25: View Test Report | 41 |
| Figure 5-26: View Test Report Window | 42 |
| Figure 5-27: About | 43 |
| Figure 6-1: GeniPASS Main Window | 45 |
| Figure 6-2: Stop Button | 46 |
| Figure 6-3: GeniSPOT Self-Diagnosis | 46 |
| Figure 6-4: Pattern | 47 |

| Figure 6-5: Pattern Window | 47 |
|--|----|
| Figure 6-6: Pattern Window Options | 47 |
| Figure 6-7: Import S/N & P/N | 48 |
| Figure 6-8: Switch to GeniPASS Express | 48 |
| Figure 6-9: Select Your Monitor | 49 |

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List of Tables

Table 2-1: Packing List Items5







Introduction





1.1 Introduction



Figure 1-1: GeniSPOT

The GeniSPOT screen calibration tool is for calibrating monochrome monitors used for diagnostic applications and ensures display consistency, reliability, and conformance to standards.

The GeniSPOT external sensor combined with the GeniPASS software allows the monitor to be adjusted to conform to AAPM, DIN, JIS and IEC standards. The GeniSPOT also features a luminance sensor, so the display brightness is automatically adjusted according to lighting conditions. The self-diagnosis function allows the GeniSPOT to be calibrated for accurate performance.

1.2 System Requirements

In order for the software to function correctly the following system minimum requirements should be met.

1.2.1 Hardware Requirements

The following hardware is required to use the GeniSPOT.

- **CD-ROM** for driver installation
- USB port for plugging in the GeniSPOT

Page 2

1.2.2 Software Requirements

The GeniSPOT requires the following software:

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Microsoft® Windows XP







Unpacking



2.1 Unpacking Precautions

When the GeniSPOT is unpacked, please do the following:

 Make sure the packing box is facing upwards so the GeniSPOT does not fall out of the box.

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• Make sure all of the components shown in the next section are present.

2.2 Package Contents



If any of the components listed in the checklist below are missing, do not proceed with the installation. Contact the IEI reseller or vendor that the GeniSPOT was purchased from, or contact and IEI sales representative directly by sending an email to <u>sales@iei.com.tw</u>.

The GeniSPOT is shipped with the following components.

| Quantity | Item and Part Number | Image |
|----------|----------------------|-----------|
| 1 | GeniSPOT | |
| 1 | Utility CD | PACIMALE" |

Table 2-1: Packing List Items







Installation



3.1 Installation Overview

Installation includes setting up the hardware and connecting it to the system, installation of the GeniSPOT drivers and finally, installation of the GeniPASS software.

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3.2 Hardware Installation

The GeniSPOT can be installed for a single monitor or multiple monitors. Special instructions for multiple monitors are noted. To install the GeniSPOT please follow the directions below:

Step 1: Attach the GeniSPOT sensor holder onto the (primary) monitor. Place the holder on the top of the (primary) monitor so that the two legs are straddling over the front and back of the monitor edge and the cable is facing the rear of the monitor. Turn the screw clockwise to tighten the holder into position.



Figure 3-1: GeniSPOT Holder Attachment

Step 2: Attach the GeniSPOT USB cable to the monitor USB hub, and the monitor to the computer. Connect the cable from the GeniSPOT to one of the A-series USB ports on the rear panel of the monitor. Attach the USB B-series connector of the included cable (included with the monitor) to the USB B-series port on the





rear panel of the (primary) monitor and the A-series connector to a USB port on

the computer system.



Figure 3-2: USB Cable Setup (Single Monitor)

Step 3: Attach the USB cables to the second (other) monitors. Connect the B-series connector of the included cable (included with the monitor) to the monitor, and the A-series end to the computer.





Figure 3-3: USB Cable Setup (Multiple Monitors)

3.3 Driver Installation

To install the drivers for the GeniSPOT please follow the steps outlined below.

Step 1: Connect the GeniSPOT to the system and the hardware installation wizard will automatically appear. Select **"Yes, this time only"** then click **NEXT** to continue.







Figure 3-4: Hardware Installation Wizard

- **Step 2:** Insert the GeniSPOT driver CD into the computer's CD or DVD drive.
- Step 3: Select "Install the software automatically (Recommended)" and then click **NEXT** to continue.



Figure 3-5: Search for Drivers

Page 10



Step 4: The hardware installation wizard searches for the GeniSPOT drivers.

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| Found New Hardware Wizard | | | | |
|---------------------------------------|------------------|--|--|--|
| Please wait while the wizard searches | | | | |
| GniSpot MONO Calibrator | | | | |
| | 3 | | | |
| | | | | |
| | | | | |
| | Kext Next Cancel | | | |

Figure 3-6: Searching for Drivers

Step 5: Select the "GeniSPOT MONO Calibrator" and click **NEXT** to continue.

| Ę | GniSpot MONO Calibrator | | | |
|---|--|--------------------|----------------------|----------------|
| 0 | escription | Version | Manufacturer | Location |
| | GniSpot MONO Calibrator | Unknown | MoCalibrator | c:\windows\inf |
| | Silabs C8051F320 USB Board | Unknown | Silicon Laboratories | c:\windows\inf |
| < | | | | > |
| | This driver is not digitally Tell me why driver signing is im | signed! portant | | |

Figure 3-7: Select GeniSPOT Driver

Step 6: The GeniSPOT drivers are installed. This takes a few moments.



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Figure 3-8: GeniSPOT Drivers Installing

Step 7: The GeniSPOT driver installation is complete. Click **FINISH** to complete the installation process.



Figure 3-9: GeniSPOT Driver Installation Complete

3.4 GeniPASS Installation



The drivers for the GeniSPOT must be installed before installing the GeniPASS software. Without the correct drivers the GeniPASS software will not function correctly.

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To install the GeniPASS quality control software, follow the directions below:

- Step 1: Insert the driver CD. The autorun function should start the main menu. Choose the installation to continue. If the menu does not appear go to Start -> Run and browse to E:\setup.exe.
- Step 2: The GeniPASS main installation menu appears. Select "GeniPASS QC Utility" to install the GeniPASS monitor quality control software.



Figure 3-10: GeniSPOT Main Menu

Step 3: Select the preferred language for the installation from the dropdown list. ClickOK to continue.







Figure 3-11: Language Selection

Step 4: The "GeniPASS Setup Wizard" welcome screen appears. Click NEXT > to

continue.



Figure 3-12: Hardware Wizard Welcome

Step 5: Choose the installation folder for the GeniPASS software (default recommended). Click NEXT > to continue.



| Setup - C | ieniPASS |
|--------------------|---|
| Select De Where | estination Location should GeniPASS be installed? |
| D | Setup will install GeniPASS into the following folder. |
| To con C:\Pro | inue, click Next. If you would like to select a different folder, click Browse. |
| | |
| | |
| At least | 18.3 MB of free disk space is required. |
| | < Back Next > Cancel |

Figure 3-13: Choose Installation Directory

Step 6: Choose the name of the Start Menu folder for the GeniPASS software (default recommended). Click NEXT to continue.

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| 💽 Setup - GeniPASS |
|--|
| Select Start Menu Folder Where should Setup place the program's shortcuts? |
| Setup will create the program's shortcuts in the following Start Menu folder. To continue, click Next. If you would like to select a different folder, click Browse. |
| GeniPASS Browse |
| |
| |
| < Back Next > Cancel |

Figure 3-14: Start Menu Folder

Step 7: Select "Create a desktop icon" to automatically create an icon on the desktop during installation. Select "Create a Quick Launch icon" to automatically





create an icon in the Quick Launch bar during installation. Click NEXT to

continue.

| 💽 Setup - GeniPASS 📃 🗖 🔀 |
|--|
| Select Additional Tasks Which additional tasks should be performed? |
| Select the additional tasks you would like Setup to perform while installing GeniPASS, then click Next. |
| Additional icons: |
| Create a desktop icon |
| Create a Quick Launch icon |
| |
| < Back Next > Cancel |

Figure 3-15: Desktop and Quick Launch Icon Selection

Step 8: Check the installation details and click **INSTALL** to begin the installation process.

| 💽 Setup - GeniPASS 📃 | |
|---|----------|
| Ready to Install Setup is now ready to begin installing GeniPASS on your computer. | |
| Click Install to continue with the installation, or click Back if you want to review or change any settings. | |
| Destination location: C:\Program Files\GeniPASS Start Menu folder: GeniPASS | |
| Σ | <u> </u> |
| K Back Install Ca | ancel |

Figure 3-16: GeniPASS Installation Ready

Page 16

Step 9: The progress indicator shows the installation progress.

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| Setup - GeniPASS | |
|---|----|
| Installing Please wait while Setup installs GeniPASS on your computer. | J. |
| Extracting files C:\Program Files\GeniPASS\CA200Srvr.dll | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Figure 3-17: GeniPASS Progress Indicator

Step 10: The window indicating successful installation appears. Click FINISH to complete

the installation process.



Figure 3-18: GeniPASS Installation Complete







Software Configuration



4.1 Overview

This chapter outlines the configuration of the GeniSPOT software. Before running any tests it is recommended that all the settings be configured. This ensures the best performance from your monitor and sets up important settings. Proceed through this chapter through to the end to fully configure the GeniSPOT.

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4.2 Starting GeniPASS

After installation the GeniPASS software can be found by selecting **Start -> All Programs -> GeniPASS** then selecting the **GeniPASS** menu item.



Figure 4-1: GeniPASS Group

The GeniPASS tray icon allows easy access to the GeniPASS functions.



Figure 4-2: GeniPASS Tray Icon



4.3 User Settings

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The first time the GeniPASS software is run, all the user settings should be set. After the initial setup, individual settings can be adjusted if needed. To adjust all the user settings, for initial setup, follow the instructions below.

Step 1: Switch to Professional mode to access all the configuration settings (Section 5.7).

(----).

Step 2: Adjust the user settings indicated below.

- 1. Auto-Dimming Control configures the auto-dimming controls (Section 4.4)
- 2. Select Monitor selects the monitor to be tested (Section 4.5)
- 3. Select Performance Criteria selects the standards for testing the monitor (Section 4.6)
- 4. Profile sets and adjusts user profile settings (Section 4.7)

| Confor Te | mance est | Unifor Te | rmity st | Lumina Tes | ince t | Ru Calibr | n ation | Lun | ninance 0 | | User Setting Select Monitor |
|-------------------|------------------|-----------------|-------------|---------------|-----------|--------------|------------|-------|---------------------------------------|--------|--------------------------------|
| Stop | Geni Self-Dia | Spot agnosis | Auto- | mming Fol | Patt | ern | Import S/N | & P/N | S/N P/N: None! Select your monitor | TYPE 🔹 | Select Conformane Criteria |
| View ⁻ | Test Repor | t His | story List | Switch t | o GeniPA | SS Express | s Ak | pout | | | 4file |



4.4 Auto-Dimming Control

The **Auto-Dimming Control** window enables, disables and sets the auto-dimming options.

To adjust the auto-dimming controls, follow these steps:

Step 1: Click Auto-Dimming Control in the main window.



| Confor Te | mance est | Unifor Tes | mity st | Lumin Te | ance st | R Calib | un oration | |
|------------------------------|--------------|------------------|-------------------------|-------------|------------|------------|---------------|---------|
| Stop GeniSpot Self-Diagno | | iSpot agnosis | Auto-Dimming Control | | Pat | tern | Import S/N | 18. P/N |
| View | Test Repor | t Hist | ory List | Switch | to GeniPA | SS Expre | ss Al | bout |

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Figure 4-4: Auto-Dimming Control

Step 2: Click OK to continue to the Auto-Dimming Configuration screen.

| GeniPASS | |
|--------------------------|----------|
| GeniSpot Read Test , Ple | ase Wait |
| ОК |] |

Figure 4-5: Auto-Dimming Prompt

Step 3: The Auto-Dimming Configuration screen appears.

| 🖲 Auto-Dimming Control S | ietting | × |
|--|--|---|
| To Start Auto-Dimming Control Function, please run the Auto-Dimming Control Setting Wizard first. | Real Time Ambient Light Information Detect Agrient Light Ambient Light Value Toggle On/Off Auto Dimming ON Trigger Value Run Auto-Dimming On Setting Wizzard | |
| bse | Auto-Dimming Control State : OFF e | |

Figure 4-6: Calibration Complete

- a. **Detect Ambient Light** detects the level of ambient light (for reference).
- b. Ambient Light Level shows the results of the ambient light test.
- c. **Toggle On/Off** turn the auto-dimming control on/off, the current state of the auto-dimming is shown in **e**.





- d. **Run Auto-Dimming Control Setting Wizard** configures the settings for the auto-dimming.
- e. Auto-Dimming Control State shows whether auto-dimming is on or off.
- f. **Close** exits the auto-dimming control window

4.4.1 Auto-Dimming Control Setting Wizard

Step 1: Click the Run Auto-Dimming Control Setting Wizard Button to begin the

wizard.

Step 2: The Auto-dimming wizard appears.

| 🖲 Auto-Dimming Control S | Setting | X |
|--|--|---|
| To Start Auto-Dimming Control Function, please run the Auto-Dimming Control Setting Wizard first. | Auto-Dimming Control Setting Wizzard 1. Select the desired Monitor Luminance Level under high ambient light environment and press OK. Lum Value QK Cancel Trigger Value 0 | |
| Close | Ambient Light Value 0 | |

Figure 4-7: Auto-Dimming Wizard Step 1

- **Step 3:** Select the maximum luminance level that the monitor should reach during operation.
- **Step 4:** Adjust the current ambient light level to the light level where the monitor should start displaying the highest luminance.
- **Step 5:** Click **OK** to measure the current light level.
- **Step 6:** The auto-dimming wizard step 2 appears.



| 🖲 Auto-Dimming Control S | Setting | × |
|--|--|---|
| To Start Auto-Dimming Control Function, please run the Auto-Dimming Control Setting Wizard first. | Auto-Dimming Control Setting Wizzard 2. Select the desired Monitor Luminance Level under low ambient light environment and press OK. Lum Value Trigger Value | |
| Close | Ambient Light Value 48 | |

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Figure 4-8: Auto-Dimming Wizard Step 2

- **Step 7:** Select the minimum luminance level that the monitor should reach during operation.
- **Step 8:** Adjust the current ambient light to the light level where the monitor should reach the specified minimum luminance.
- Step 9: Click OK to measure the current light level.
- Step 10: The auto-dimming wizard final screen appears.

| 🖲 Auto-Dimming Control S | Setting | × |
|--|---|---|
| To Start Auto-Dimming Control Function, please run the Auto-Dimming Control Setting Wizard first. | - Auto-Dimming Control Setting Wizzard | |
| | 3. Setting completed. Auto-Dimming Control Setting can be saved by clicking the "Save Profile" icon in the Profile Page ! Press OK to exit. Lum Value |] |
| | Ambient Light Value -48 | |

Figure 4-9: Auto-Dimming Wizard Step 3





Step 11: Click OK to complete the auto-dimming control settings wizard.

4.5 Select Monitor

The **Select Monitor** option is for choosing which monitor will be tested using the GeniSPOT. To select the monitor for testing, follow these steps:



Test multiple monitors one at a time. It is not necessary to disconnect the GeniSPOT to test another monitor. Leave the GeniSPOT attached to the primary monitor.

Step 1: Click **SELECT MONITOR** in the main window.

| Luminance 0 | | User Setting |
|---------------------|-------|-----------------------------|
| | | Select Monitor |
| S/N P/N: None! | | Select Conformance Criteria |
| Select your monitor | YPE 🗾 | |
| | | Profile |

Figure 4-10: Select Monitor

Step 2: The Select Monitor window appears.





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Figure 4-11: Select Monitor

- Step 3: Select a monitor. Choosing a monitor automatically selects the monitor and closes the monitor selection window. The monitor is chosen by one of the following options
 - a. COM port number
 - b. Visual representation (numbered according to DDC/CI port number and not Windows Desktop Monitor Identifier)
 - c. Monitor list

4.6 Select Conformance Criteria

The **Select Conformance Criteria** option is for choosing which monitor will be tested using the GeniSPOT.

To select the conformance criteria for testing, follow these steps:

Step 1: Click SELECT CONFORMANCE CRITERIA in the main window.





| Luminance 0 | | | User Setting |
|---------------------|------|---|-----------------------------|
| | | | Select Monitor |
| S/N P/N: None! | | | Select Conformance Criteria |
| Select your monitor | TYPE | • | |
| | | | Profile |



Step 2: The Select Conformance Criteria window appears.

| 🖲 Conformance Criteria Selection | | |
|--|---|--|
| Conformance Criteria Selection Selec a Conformance Criteria | Criteria Information : Target Lmax : 450.00 Cd/m ² Lmin : 0.85 Cd/m ² Criteria Luminance : Lmax / Lmin > 250 Lmax > 170.00 Cd/n Delta Lmax < 10% B Lamb < Lmin / 1.5 GrayScale : Target Error Rate < 10% of GSDF Uniformity : Gray Level1 : 204 (80%) Gray Level2 : 26 (10%) | |
| | (Lmax - Lmin) / (Lmax + Lmin) x 200 < 30% | |



- Step 3: Select the standard for conformance from the dropdown list (labeled "a").Section "b" displays the details for the selected conformance standard.
- Step 4: Click OK (labeled "c") to accept the settings and exit.

Click **CANCEL** (labeled "d") to discard changes and exit.

4.7 Profile

Profile allows setting of personalized options and for loading previously saved settings.

To adjust the current user profile, follow these steps:



Step 1: Click **PROFILE** in the main window.

| Luminance 0 | [| User Setting |
|--------------------------|---|-----------------------------|
| | | Select Monitor |
| S/N P/N: None! | | Select Conformance Criteria |
| Select your monitor TYPE | • | |
| | | Profile |

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Figure 4-14: Profile

Step 2: The Profile window appears.

|] | | 2 |
|-----------------------------|--|---|
| Auto-Dimming 0 0 0 | Left: 0 Top: 0 Width: 1 Height: 0 | |
| | | |
|)iagnosis eagene upo | on GeniPASS start-up | |
| | | |
| | Auto-Dimming 0 0 | Auto-Dimming 0 0 0 0 0 0 0 0 0 0 0 0 0 |

Figure 4-15: Profile

Step 3: The Profile menu settings are listed below:

- a. Select the type of monitor for testing.
- b. Select whether the monitor is color or monochrome.
- c. Displays auto-dimming settings (auto-dimming settings can be adjusted in the auto-dimming window 4.4).





- d. Select the conformance standard to use for testing and calibration.
- e. Select the DDC Port to use.

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- f. Displays the position and size of the test images.
- g. Check this option to run a self-diagnosis of the GeniSPOT when the software is started.
- h. **SAVE PROFILE** saves the currently displayed profile settings.
- i. **LOAD PREVIOUS PROFILE** loads the previously saved settings.
- j. **USER CURRENT SETTING** loads the settings from the main window and the user setting windows into the current **Profile Setting** window.
- k. **LOAD** loads the **Profile Setting** options into the main window.
- I. **CLOSE** exits the current window without saving and returns to the main window.







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Basic Functions





5.1 Overview

This chapter gives an overview of all the functions of the GeniPASS Express Mode.



Turn off auto-dimming before performing any calibration or tests.

The GeniPASS software starts in Express mode. All the necessary features for day-to-day use can be found in the Express mode interface. The figure below shows the GeniPASS Express window and is followed by a brief explanation of each button's function.

- 1. Conformance Test tests the conformance of the selected monitor (Section 5.2)
- 2. Uniformity Test tests the uniformity of the selected monitor (Section 5.3)
- 3. Luminance Test tests the luminance of the selected monitor (Section 5.4)
- Run Calibration calibrates the monitor using the previous test results (Section 5.5)
- 5. History List displays a list of the results of all previous tests (Section 5.6)
- 6. Switch to GeniPASS Pro changes to Professional mode (Section 5.7)
- 7. View Test Report displays the results of the last test (Section 5.8)
- 8. **Configuration** opens a list with the following options:
 - a. Select Monitor selects the monitor to be tested (Section 4.5)
 - b. Select Performance Criteria selects the standards for testing the monitor (Section 4.6)
 - c. **Profile** sets and adjusts user profile settings (Section 4.7)
- 9. Exit closes GeniPASS
- 10. About displays information about GeniPASS (Section 5.9)





Page 30

5.2 Conformance Test

The conformance test compares the luminance read by the GeniSPOT to the luminance that should be produced by the monitor at different luminance levels.

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Corp.

To perform the conformance test, follow these steps:

Step 1: Click **CONFORMANCE TEST** in the main window. The conformance test starts automatically.

| GeniPASS for MMD Monochrome Series | | | | About |
|--|-------------|-----------------------------|------------------------|--------------|
| Conformance Uniformity Luminance Run History List Test Test Calibration History List | | | | |
| <u>S</u> witch to G | eniPASS Pro | <u>V</u> iew Test Report | C <u>o</u> nfiguration | <u>E</u> xit |

Figure 5-2: Conformance Test

Step 2: Place the GeniSPOT in the white block and click **OK** to continue.

| GeniPASS | × |
|-----------------------|-------|
| Put GeniSpot in white | block |
| ОК | |

Figure 5-3: Conformance Start

Step 3: The GeniPASS software displays a white screen, then a black screen and then progresses from black and through the grays to white. The process takes a few minutes. No other software should be used while the conformance test is being performed. The GeniSPOT must remain in the same position at the center of the monitor throughout the test.



Figure 5-4: Conformance Test Progress





Step 4: Wait for the conformance test to finish. When finished, click OK to complete

the conformance test.

| GeniPASS 🛛 🔀 |
|-----------------------|
| Conformance compelete |
| ОК |
| |

Figure 5-5: Conformance Complete

5.3 Uniformity Test

The uniformity test tests the uniformity of the screen. The center, top-left, bottom-left, bottom-right and top-right are tested and the values compared to determine the evenness of the screen's brightness.

To perform the uniformity test, follow these steps:

Step 1: Click Uniformity Test in the main window.

| GeniPASS for MMD Monochrome Series | | | | About |
|---|-------------|-----------------------------|------------------------|----------------------|
| ConformanceUniformityLuminanceRunTestTestCalibrationHistory | | | | <u>H</u> istory List |
| <u>S</u> witch to G | eniPASS Pro | <u>V</u> iew Test Report | C <u>o</u> nfiguration | <u>E</u> xit |

Figure 5-6: Uniformity Test

Step 2: The **Uniformity Test** window appears. The uniformity test window displays the readings from the uniformity test. Click the **UNIFORMITY TEST** button to start testing the uniformity of the monitor.



| EUniformity Test | | | X |
|---|-------------------------------|-------------------------|--------------------------------|
| Test Carlignation Window Size : 10% Manuaeuest Food : | Left Top(1) | | Right-Top(4) |
| Conformance Orleria AMPM Primary | 0000.00 CdiM^2 | | 0000.00 Cd/M^2 |
| Gray Lavel 204 - | | Center(2) | |
| AVPM Bay Level 1/2 Option G. Run Grap Level 1: 204 (C. Run Grap Level 2: 25 | | 0000.00 Cd/M*2 | |
| Uniformity Test | CatHoton(2) 0000.00 Cd/M*2 | | Rgt+Eoton(3) 0000.00 Cd/M*2 |
| Severa HTML | Criteria : (Lmax - Lm | in) / (Lmax + Lmin) x 2 | 00 < 30% |
| Est | Test Date : | nale . U | |

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Figure 5-7: Uniformity Test Window

Step 3: Place the GeniSPOT in the center white block and click **OK** to continue.



Figure 5-8: Center Block

Step 4: Place the GeniSPOT in the top-left white block and click **OK** to continue.







Figure 5-9: Top-Left Block

Step 5: Place the GeniSPOT in the bottom-left white block and click **OK** to continue.



Figure 5-10: Bottom-Left Block

Step 6: Place the GeniSPOT in the bottom-right white block and click **OK** to continue.





Step 7: Place the GeniSPOT in the top-right white block and click **OK** to continue.





Figure 5-12: Top-Right Block

Step 8: The Uniformity Test window appears again. The results of the uniformity test are shown. Click SAVE TO HTML to save the results to another HTML file (this is in addition to the HTML file automatically saved for every test). Click OK to leave the Uniformity Test window.

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5.4 Luminance Test

The luminance test tests the ability of the monitor to correctly produce different levels of brightness. The test gradually moves from a black screen, through shades of gray, to a fully white screen.

To perform the luminance test, follow these steps:

Step 1: Click Luminance Test in the main window. The luminance test starts automatically.

| GeniPASS for MMD Monochrome Series | | | | About |
|---|-------------|-----------------------------|------------------------|----------------------|
| Conformance Uniformity Luminance Run History List Test Test Test Environmentation Environmentation Environmentation | | | | <u>H</u> istory List |
| <u>S</u> witch to Ge | eniPASS Pro | <u>V</u> iew Test Report | C <u>o</u> nfiguration | <u>E</u> xit |

Figure 5-13: Luminance Test

Step 2: The luminance test window appears. The luminance test window shows criteria for the test and the results of the test. Click **Run Test** to continue.





| 🖲 Luminance Test | | X |
|------------------------------------|----------------------|----------|
| Lmax : 0 | Lmin : 0 | Lamb : 0 |
| Luminance Conformance Test | | |
| Check: Result: | Criteria : | |
| | Lmax / Lmin > 250 | |
| | Lmax > 170 00 Cd/M^2 | |
| | lamb < lmin / 1 E | |
| | Lamb < Limit / 1.0 | |
| | | |
| Select Conformance Criteria AAPM F | rimary | Date : |
| Bun Test | nl <u>E</u> xit | |

Figure 5-14: Luminance Test Window

Step 3: Place the GeniSPOT in the white block. Don't move the GeniSPOT until prompted. Click **OK** to start the luminance test.

| GeniPASS 🛛 🔀 |
|---------------------------|
| Put Device in white block |
| ок |
| |

Figure 5-15: Start Luminance Test

Step 4: Click **OK** to complete the Luminance Test.

| GeniPASS 🛛 🔀 |
|--------------------|
| Luminance Test end |
| ОК |
| |

Page 36

Figure 5-16: Luminance Test Complete

Step 5: The Luminance Test window appears again. The results of the luminance test are shown. Click SAVE TO HTML to save the results to another HTML file (this is in addition to the HTML file automatically saved for every test). Click OK to leave the Luminance Test window.



5.5 Run Calibration

Run Calibration sets the calibration of the monitor. The calibration gradually moves from a black screen, through shades of gray, to a fully white screen.

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To Run Calibration, follow these steps:

Step 1: Click Run Calibration in the main window.

| GeniPASS for MMD Monochrome Series | | | | About |
|--|-------------|-----------------------------|------------------------|----------------------|
| Conformance Uniformity Luminance Run History List Test Test Calibration History List | | | | <u>H</u> istory List |
| <u>S</u> witch to Ge | eniPASS Pro | <u>V</u> iew Test Report | C <u>o</u> nfiguration | <u>E</u> xit |

Figure 5-17: Run Calibration

Step 2: Place the GeniSPOT in the white block. Don't move the GeniSPOT until prompted. Click **OK** to start the calibration test.

| GeniPASS 🛛 🔀 |
|---------------------------|
| Put Device in white block |
| ОК |
| |

Figure 5-18: Start Calibration

Step 3: The calibration test runs through the screen colors from black to white as shown in the figure below.



Figure 5-19: Calibration Test

Step 4: Click **OK** to complete the Calibration Test.



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Conformance compelete



If calibration is successful, luminance is reset to 450 nit.

5.6 History List

History List displays the results of all the previous tests. The tests are all saved as HTML files and stored. The **History List** provides a list of all those saved files. To view the previous test results, follow the steps below.

Step 1: Click the History List button to display the results.

| Geni | GeniPASS for MMD Monochrome Series | | | | | | | | | |
|------------------------------|------------------------------------|----------------------|------------------------|--------------|--|--|--|--|--|--|
| Confor <u>m</u> ance Test | <u>U</u> niformity Test | <u>H</u> istory List | | | | | | | | |
| <u>S</u> witch to Ge | Switch to GeniPASS Pro | | C <u>o</u> nfiguration | <u>E</u> xit | | | | | | |

Figure 5-21: History List

Step 2: The History List window appears.



| 📜 History List | × |
|---|---|
| Double-click on a history file to view the testing history Conformance Files Unit may Files Lumi fair e Files | 1 |
| Intm Conformance_2002_04_30_22_50_28.htm Conformance_2002_05_04_02_11_57.htm Conformance_2002_05_04_20_25_05_22.53_44.htm Luminance_2002_05_01_03_14_06.htm Luminance_2002_05_01_03_14_06.htm Luminance_2002_05_04_05_44_23.htm Luminance_2002_05_04_05_44_23.htm Luminance_2002_05_04_05_42_35.htm Luminance_2002_05_04_21_37_35.htm Luminance_2002_05_04_02_40_31.htm Uniformity_2002_05_04_02_40_31.htm Uniformity_2002_05_04_21_36_59.htm Uniformity_2002_05_05_22_55_43.htm | |

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Figure 5-22: History List Window

Step 3: Click one of the buttons **a** – **d** to display the results of that test in section **e**.

- a. ALL FILES shows all the results files
- b. CONFORMANCE FILES shows the results of all conformance tests
- c. UNIFORMITY FILES shows the results of all uniformity tests
- d. LUMINANCE FILES shows the results of all luminance tests
- e. Displays the results chosen by clicking one of the buttons **a d** above
- **Step 4:** To view results from the list, double-click the filename.
- Step 5: The results open in the default web browser.





Figure 5-23: HTML Results Page

5.7 Switch to GeniPASS Pro

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The **SWITCH TO GENIPASS PRO** button switches from the GeniPASS Express interface to the GeniPASS professional interface. To switch to the GeniPASS professional interface, click the **SWITCH TO GENIPASS PRO** button.

| GeniPASS for MMD Monochrome Series | | | | | | | | | |
|------------------------------------|----------------------------|-----------------------------|----------------------------|----------------------|--|--|--|--|--|
| Confor <u>m</u> ance Test | <u>U</u> niformity Test | <u>L</u> uminance Test | Run <u>C</u> alibration | <u>H</u> istory List | | | | | |
| <u>S</u> witch to Ge | eniPASS Pro | <u>V</u> iew Test Report | C <u>o</u> nfiguration | <u>E</u> xit | | | | | |

Figure 5-24: Switch to GeniPASS Pro

Page 40

5.8 View Test Report

VIEW TEST REPORT displays the results of the last test in a popup window. To view the test reports, follow the steps below.

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Step 1: Click the **VIEW TEST REPORT** button to display the results.

| GeniPASS for MMD Monochrome Series | | | | | | | | | |
|------------------------------------|----------------------------|---------------------------|----------------------------|----------------------|--|--|--|--|--|
| Confor <u>m</u> ance Test | <u>U</u> niformity Test | <u>L</u> uminance Test | Run <u>C</u> alibration | <u>H</u> istory List | | | | | |
| <u>S</u> witch to Ge | Switch to GeniPASS Pro | | C <u>o</u> nfiguration | <u>E</u> xit | | | | | |

Figure 5-25: View Test Report

Step 2: The View Test Report window appears.







Figure 5-26: View Test Report Window

The View Test Report window shows the following:

- a. JNDs / Luminance Interval vs. Index of Luminance Interval graph
- b. KL/L for A JND vs. JND Indices graph
- c. Luminance (cd/m²) vs. digital driving level graph
- d. Test results
- e. Luminance value table
- f. Check result

Page 42

- g. SAVE TO HTML saves the current results to an HTML file
- h. CLOSE exits the window and returns to the main window

5.9 About

The **About** window displays general information about the GeniPASS software, including revision information.

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| GeniPASS for MMD Monochrome Series | | | | | | | | | |
|------------------------------------|----------------------------|-----------------------------|----------------------------|----------------------|--|--|--|--|--|
| Confor <u>m</u> ance Test | <u>U</u> niformity Test | <u>L</u> uminance Test | Run <u>C</u> alibration | <u>H</u> istory List | | | | | |
| <u>S</u> witch to Ge | eniPASS Pro | <u>V</u> iew Test Report | C <u>o</u> nfiguration | <u>E</u> xit | | | | | |

Figure 5-27: About







Advanced Functions



6.1 Overview

GeniPASS Professional mode provides a more complex interface for GeniPASS. There are a few options available in the Professional interface that are not offered in the Express interface. The details for the additional options are included in this section, while those that are shared with the Express interface refer to the **Basic Functions** section.

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To switch to the GeniPASS professional interface, refer to section 5.7.

GeniPASS Professional allows easier control over the configuration of the GeniPASS software. The figure below outlines the options available and a brief description of what they do.

| Conformance Test | Uniformity Test | Lumince Tot | Ban Calmation | Lumin | ance 0 | | | User Setting | elect monitor | |
|---------------------|-----------------------|------------------|------------------|-----------------------|-----------------------------------|-------------------|------------|--------------|---------------|----------------|
| 5° G | Spot Auto gnosis C | ontrol P | ern Import | N & P/N S/ | N P/N : None! lect your monito | r TYPE | 4 • | Sele | formance Cri | eria |
| | rt HisoryList | Switch to senior | ASS Express | 1-3 | | | | 1.0 | le | |
| GeniPASS For MMD | Aonochrome Series | | Pro | ofile didn't load !!! | Cor | nmunication by Au | to Detect. | | DDC Port: 0 | COM Port Close |

Figure 6-1: GeniPASS Main Window

- Conformance Test tests the conformance of the selected monitor (Section 5.2)
- 2. Uniformity Test tests the uniformity of the selected monitor (Section 5.3)
- 3. Luminance Test tests the luminance of the selected monitor (Section 5.4)
- Run Calibration calibrates the monitor using the previous test results (Section 5.5)
- 5. Stop stops the current operation (Section 6.2)
- 6. GeniSPOT Self-Diagnosis checks the GeniSPOT's calibration (Section 6.3)
- 7. Auto-Dimming Control configures the auto-dimming controls (Section 4.4)
- 8. Pattern opens the white pattern window (Section 6.4)
- 9. Import S/N & P/N imports serial number and part numbers from connected monitors (Section 6.5)
- 10. View Test Report displays the results of the last test (Section 5.8)
- 11. History List displays a list of the results of all previous tests (Section 5.6)
- 12. Switch to GeniPASS Express changes to Express mode (Section 6.6)
- 13. About displays information about the GeniPASS software (Section 5.9)





- 14. Select your Monitor selects the monitor to be tested (Section 6.7)
- 15. Select Monitor selects the monitor to be tested (Section 4.5)
- 16. Select Performance Criteria selects the standards for testing the monitor (Section 4.6)
- 17. Profile sets and adjusts user profile settings (Section 4.7)

6.2 Stop

Stop halts the current test and returns to the main window.

| Confor Te | mance est | Unifor Tes | nity st | Lumin Te | ance st | R Calib | un Fration | |
|--------------|----------------|--|------------|-------------|------------|------------|---------------|------|
| Stop | Gen Self-Di | niSpot Auto-Dimming Diagnosis Control | | Pat | tern | Import S/N | 18. P/N | |
| View 1 | Test Repor | rt Hist | ory List | Switch | to GeniPA | SS Expre | ss Al | bout |

Figure 6-2: Stop Button

6.3 GeniSPOT Self-Diagnosis

GeniSPOT Self-Diagnosis tests the GeniSPOT to check if it is functioning correctly and that its measurements are within specification.

| Confor Te | mance est | Unifor Tes | nity st | Lumin Te | ance st | Run Calibration | | |
|--------------|----------------|------------------|--------------|-------------------|--------------|--------------------|------------------|------|
| Stop | Gen Self-Di | iSpot agnosis | Auto-I Co | Dimming Introl | ming Pattern | | Import S/N & P/N | |
| View | Test Repor | t Hist | ory List | Switch | to GeniPA | SS Expre | ss Al | bout |



6.4 Pattern

Page 46

Pattern displays a white window that fills the whole screen.

Step 1: Click Pattern in the main window.

| Confor Te | mance est | Unifor Tes | mity st | Lumin Te | ance st | Run Calibration | | |
|--------------|------------------|------------------|--------------|------------------|------------|--------------------|------------------|------|
| Stop | Geni Self-Dia | iSpot agnosis | Auto-E Co | Dimming ntrol | Pattern | | Import S/N & P/N | |
| View | Test Repor | t Hist | ory List | Switch | to GeniPA | SS Expre | ss A | bout |

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Figure 6-4: Pattern

Step 2: The Pattern window appears.



Figure 6-5: Pattern Window

Step 3: Double-click anywhere on the window to display the menu.

| -M | enu |
|----|---------------------|
| | <u>H</u> ide Menu |
| | <u>C</u> lose Geni |
| | <u>S</u> top Window |

Figure 6-6: Pattern Window Options

The pattern window has the following options.

- a. Hide Menu hides the pattern window options menu.
- b. Close Geni closes the GeniPASS program.
- c. **Stop Window** closes the pattern window and returns to the GeniPASS main window.





6.5 Import S/N & P/N

The **Import S/N & P/N** button imports serial numbers and part numbers from connected monitors. To import serial numbers and part numbers, click the **Import S/N & P/N** button.

| Confor Te | mance est | Unifor Tes | nity :t | Lumin Te | ance st | R Calil | tun pration | |
|--------------|-----------------|------------------|--------------|------------------|------------|------------|----------------|--------|
| Stop | Gen Self-Dia | iSpot agnosis | Auto-l Co | Dimming ntrol | Pat | tern | Import SA | N& P/N |
| View | Test Repor | t Hist | ory List | Switch | to GeniPA | ASS Expre | ss A | bout |

Figure 6-7: Import S/N & P/N

6.6 Switch to GeniPASS Express

The **Switch to GeniPASS Express** button switches the user interface from the GeniPASS Professional interface to the GeniPASS Express interface. To switch to the GeniPASS Express interface, click the **Switch to GeniPASS Express** button.



Figure 6-8: Switch to GeniPASS Express

6.7 Select Your Monitor

The **Select Your Monitor** drop-down list allows easy selection of the monitor to be tested and calibrated.

To select a monitor, click on the drop-down list highlighted below, and select the monitor.





Figure 6-9: Select Your Monitor







Compatibility





The compatible items described here have been tested by the IEI R&D team and found to be compatible with the GeniSPOT

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A.1 Compatible Operating Systems

The following operating systems have been successfully run on the GeniSPOT.

- MS-DOS 6.22
- Microsoft Windows XP (32-bit)
- Microsoft Windows 2000
- Red Hat 9.0

A.2 Compatible Processors

The following Intel® Socket 478 processors have been successfully tested on the GeniSPOT

| CPU | FSB | Frequency | L2 Cache |
|------------------|--------|-----------|----------|
| Intel® Pentium 4 | 800MHz | 3.2GHz | 1MB |





A.3 Compatible Memory Modules



The memory modules listed below have been tested on the GeniSPOT other memory modules that comply with the specifications may also work on the GeniSPOT but have not been tested.

The following memory modules have been successfully tested on the GeniSPOT.

| Manufacturer | Model No. | Capacity | Speed | Туре |
|--------------|--------------|----------|---------|------|
| Kingston | KVR400X64C3A | 512 MB | 400 MHz | DDR |







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Hazardous Materials Disclosure



B.1 Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated "Environmentally Friendly Use Period" (EFUP). This is an estimate of the number of years that these substances would "not leak out or undergo abrupt change." This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.

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| Part Name | Toxic or Hazardous Substances and Elements | | | | | |
|---|--|---------|---------|------------|----------------|-----------------|
| | Lead | Mercury | Cadmium | Hexavalent | Polybrominated | Polybrominated |
| | (Pb) | (Hg) | (Cd) | Chromium | Biphenyls | Diphenyl Ethers |
| | | | | (CR(VI)) | (PBB) | (PBDE) |
| Housing | х | 0 | 0 | 0 | 0 | х |
| Display | х | 0 | 0 | 0 | 0 | Х |
| Printed Circuit | х | 0 | 0 | 0 | 0 | х |
| Board | | | | | | |
| Metal Fasteners | х | 0 | 0 | 0 | 0 | 0 |
| Cable Assembly | х | 0 | 0 | 0 | 0 | Х |
| Fan Assembly | х | 0 | 0 | 0 | 0 | Х |
| Power Supply | Х | 0 | 0 | 0 | 0 | х |
| Assemblies | | | | | | |
| Battery | 0 | 0 | 0 | 0 | 0 | 0 |
| O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is | | | | | | |
| below the limit requirement in SJ/T11363-2006 | | | | | | |
| X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for | | | | | | |
| this part is above the limit requirement in SJ/T11363-2006 | | | | | | |

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此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符 合中国 RoHS 标准规定的限量要求。

本产品上会附有"环境友好使用期限"的标签,此期限是估算这些物质"不会有泄漏或突变"的 年限。本产品可能包含有较短的环境友好使用期限的可替换元件,像是电池或灯管,这些元 件将会单独标示出来。

| 部件名称 | 有毒有害物质或元素 | | | | | |
|--|-----------|------|------|----------|-------|--------|
| | 铅 | 汞 | 镉 | 六价铬 | 多溴联苯 | 多溴二苯醚 |
| | (Pb) | (Hg) | (Cd) | (CR(VI)) | (PBB) | (PBDE) |
| 壳体 | Х | 0 | 0 | 0 | 0 | Х |
| 显示 | х | 0 | 0 | 0 | 0 | х |
| 印刷电路板 | х | 0 | 0 | 0 | 0 | х |
| 金属螺帽 | х | 0 | 0 | 0 | 0 | 0 |
| 电缆组装 | х | 0 | 0 | 0 | 0 | х |
| 风扇组装 | х | 0 | 0 | 0 | 0 | х |
| 电力供应组装 | х | 0 | 0 | 0 | 0 | х |
| 电池 | 0 | 0 | 0 | 0 | 0 | 0 |
| O:表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。 | | | | | | |
| X:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。 | | | | | | |

Page 56

®Technology Corp



Index





Technology Corp

| self-diagnosis | | 46 |
|----------------|--|----|
|----------------|--|----|

L

| import | 48 |
|----------------|----|
| part numbers | 48 |
| serial numbers | 48 |
| installation | |
| drivers | 9 |
| software | 13 |
| interface | |
| basic | 48 |
| professional | 40 |

S

| Safety Precautions | 51 |
|--------------------|----|
| settings | |
| auto-dimming | 20 |
| conformance25, | 28 |
| conformance window | 26 |
| express | 48 |
| interface | 40 |

| monitor | 27 |
|--------------------------|--------|
| monitor selection | 24, 48 |
| monitor selection window | 24 |
| overview | 20 |
| profile window | 27 |
| startup | 19, 28 |
| user profile | 26 |
| system requirements | |
| hardware | 2 |
| software | 3 |
| | |

Т

U

unpacking

| package contents list | 5 |
|-----------------------|---|
| precautions | 5 |

Page 58



